Claims

1. A server for a merchant computer system, the server comprising:

a file store configured to store a range of audio/video products in
5 respective product files;

a dialogue unit operable to invite and receive a client selection from
among the products;

10 a product reader connected to read the product files from the file store
to generate a digital audio/video signal; and

a signal processing unit having an input selectively connectable to
receive the digital audio/video signal from the product reader, a processing core
15 operable to apply a defined level of content degradation to the digital audio/video
signal, and an output connected to output the degraded digital audio/video signal.

2. A server according to claim 1, wherein the dialogue unit is operable to
generate a degrade level signal, the signal processing unit having a degrade level
20 signal input for receiving a degrade level signal from the dialogue unit and being
operable to vary the degradation level responsive to the degrade level signal.

3. A server according to claim 2, wherein the degrade level signal is
dependent on a client integrity indicator determined from a personal client file
25 containing client history data stored in the file store.

4. A server according to claim 2, wherein the degrade level signal is
dependent on an authorization response received by the dialogue unit from a remote
payment gateway computer system following an authorization request from the
30 dialogue unit including a client i.d., a client payment instrument and a monetary value

of the product selected for evaluation.

5.   A server according to claim 1, wherein the processing core comprises a digital signal processor.

6.   A server according to claim 5, the digital signal processor including a delay line structure having an input arranged to receive a bit stream derived from the digital audio/video signal, noise insertion circuitry for manipulating bits of the bit stream to degrade signal quality, and an output arranged to output the manipulated bit stream.

7.   A server according to claim 5, the digital signal processor including:

a discrete Fourier transform unit operable to apply a discrete Fourier transform to obtain a frequency domain representation of the digital audio/video signal;

a frequency modulator operable to apply a manipulation process to the frequency domain representation of the digital audio/video signal; and

an inverse discrete Fourier transform unit operable to apply an inverse discrete Fourier transform to reconstruct a time domain representation of the digital audio/video signal.

8.   A server according to claim 7, wherein the manipulation process applied by the frequency modulator is such as to effect a degradation of perceived signal quality in the digital audio/video signal reconstructed by the inverse digital Fourier transform unit.

9.   A server according to claim 8, wherein the manipulation process includes one or more of the following: frequency band rejections, frequency low pass and frequency high pass.

10.   A server according to claim 8, wherein the manipulation process

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includes phase inversion over at least one range of frequency components.

11.   A server according to claim 7, wherein the manipulation process applied by the frequency modulator is applied to digital audio signals and inserts
5   masked sound contributions adjacent amplitude peaks of the frequency domain representation of the digital audio signal.

12.   A server according to claim 7, further including a mixer operatively arranged before the discrete Fourier transform unit.
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13.   A server according to claim 12, wherein a frequency modulator is operatively arranged between the mixer and the inverse discrete Fourier transform unit, and the manipulation process includes band-pass filtering to suppress frequency contributions lying outside a selected frequency range.
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14.   A server according to claim 13, wherein the manipulation process inserts masked sound contributions adjacent the mixing frequency.

15.   A server according to claim 5, the digital signal processor including:
20   a frame buffer for holding frames of a digital video signal; and
         a frame manipulator operatively arranged to manipulate frames in the frame buffer to generate a degraded digital video signal.

16.   A server according to claim 15, wherein the digital signal processor is configured to process digital video signals conforming to an MPEG standard including as frame types I-frames, P-frames and B-frames, wherein the frame manipulator is operable to identify the frame type of frames held in the frame buffer, and operable to perform frame manipulation according to frame type so as to degrade video signal quality.
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17.   A server according to claim 15, wherein the digital signal processor is

configured to process digital video signals conforming to an MPEG standard including data blocks, each comprising a plurality of pixels, wherein the frame manipulator is operable to vary the pixels of the data blocks of at least selected ones of the frames so as to degrade video signal quality.

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18.   A server according to claim 15, wherein the digital signal processor is configured to process digital video signals conforming to an MPEG standard including motion vectors, wherein the frame manipulator is operable to vary the motion vectors of at least selected ones of the frames so as to degrade video signal quality.

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19.   A server according to claim 15, wherein the digital signal processor is configured to process digital video signals conforming to an MPEG standard including objects, wherein the frame manipulator is operable to manipulate the objects of at least selected ones of the frames so as to degrade video signal quality.

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20.   A server according to claim 1, wherein the processing core is operable to process a multi-channel digital audio signal by switching individual channels within the multi-channel signal to apply spatial modification to the digital audio signal.

20   21.   A server according to claim 1, wherein the processing core is operable to process a multi-channel digital audio signal by inverting the phase of at least one of the audio channels.

22.   A server according to claim 1, wherein the processing core is operable
25   to process a multi-channel digital audio/video signal by adding together individual ones of the channels.

23.   A server according to claim 1, wherein the processing core is operable to process a multi-channel digital audio/video signal by removal or attenuation of at
30   least one of the channels.

24.   A server according to claim 1, wherein the digital audio/video signal comprises an n-bit digital audio signal and the processing core is operable to convert the n-bit digital audio signal into an m-bit digital audio signal where m is less than n.

5 25.   A server according to claim 1, wherein the processing core is operable to time modulate the digital audio/video signal.

26.   A server according to claim 25, wherein the time modulation is one or more of:

10   a speed-up or slow-down the digital audio/video signal;

a change in the value of data bits in volume, luminance or chrominance data contained within the digital audio/video signal; and

a lengthening of a sampling period of the digital audio/video signal.

27.   A server according to claim 1, wherein the processing core comprises:

a first data converter arranged as an input stage to convert the digital audio/video signal into an analog audio/video signal;

an analog processing unit operable to apply a defined level of audio/video degradation to the analog signal;

20   a second data converter arranged as an output stage to convert the degraded analog signal into a degraded digital audio/video signal for output.

28.   A server according to claim 27, wherein the analog processing unit is operable to apply frequency domain modulation to an analog audio signal.

25 29.   A server according to claim 28, wherein the frequency domain modulation is one or more of: band-reject filtering, low-pass filtering, high-pass filtering and frequency-selective phase inversion.

30.   A server according to claim 1, wherein the processing core comprises a mixer for adding a secondary signal to the digital audio/video signal.

31.   A server according to claim 30, wherein the signal processing unit further comprises a signal generator for generating the secondary signal.

5   32.   A server according to claim 31, wherein the signal generator is operable as a noise generator.

33.   A server according to claim 31, wherein the signal generator is operable to generate a content-based audio signal.

10 34.   A server according to claim 30, when appended to claim 2, wherein the level of the secondary signal mixed with the digital audio/video signal is determined by the degrade level signal.

15 35.   A method of operating a server of a merchant computer system, the method comprising:

inviting a client to make a selection from a range of audio/video products stored by the server in product files;

receiving a client selection for evaluation of one of the products;

20   reading the selected product file to generate a digital audio/video signal;

applying a defined level of content degradation to the digital audio/video signal to generate a degraded digital audio/video signal; and

outputting the degraded digital audio/video signal to the client.

25 36.   A method according to claim 35, wherein the level of content degradation applied is dependent on a client integrity indicator determined from a personal client file containing client history data.

37.   A method according to claim 35, wherein the level of content
30 degradation applied is dependent on an authorization response received by the server from a remote payment gateway computer system following an authorization request

by the server including a client i.d., a client payment instrument and a monetary value of the product selected for evaluation.

38.   A method according to claim 35, utilizing a digital signal processor to
5   apply the defined level of content degradation to the digital data stream.

39.   A method of communicating between a client, server and gateway on a computer network, the method comprising:

a)   the client establishing communication with the server to identify the client and a client payment instrument to the server;

b)   the server transmitting to the client a range of audio/video products for supply in return for payment;

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c)   the client transmitting to the server an evaluation request for one of the products;

d)   the server and gateway communicating to obtain payment authorization
20   for the requested product from the payment instrument;

e)   the server transmitting to the client a degraded evaluation version of the selected product;

25   f)   the client transmitting to the server a payment decision;

g)   the server and gateway communicating to effect payment capture for the authorized payment; and

30   h)   the server transmitting to the client a non-degraded version of the selected product.

40.   The method of claim 39, wherein said evaluation version is degraded as a function of a client history.

5   41.   The method of claim 39, wherein said evaluation version is degraded as a function of said client payment instrument.

42.   A server apparatus comprising:

means for supplying a range of audio/video products as respective digital audio/video signals;

means for inviting and receiving a client selection from among the products via a network connection; and

means for processing the digital audio/video signal associated with the selected product to apply a defined level of content degradation thereto; and

15   means for outputting the degraded digital audio/video signal to the network connection, whereby a degraded version of the selected product is supplied to the client.

43.   A merchant computer system comprising a server and a client

20   interconnectable over a network, wherein the server comprises:

a file store configured to store a range of audio/video products in respective product files;

a dialogue unit having a network connection and operable to invite and receive a client selection from among the products via the network connection;

25   a product reader connected to read the product files from the file store to generate a digital audio/video signal; and

a signal processing unit having an input connectable to receive the digital audio/video signal from the product reader, a processing core operable to apply a defined level of content degradation to the digital audio/video signal, and an output

30   connected to output the degraded digital audio/video signal from the processing core to the network connection.

44   The system of claim 43, wherein the client comprises an audio/video reproduction system operable to play the audio/video product communicated by way of the digital audio/video signal.

45.   The system of claim 43, the server further including an output stage operatively arranged between the output of the signal processing unit and the network connection, the output stage having a packetizer for sub-dividing the degraded digital audio/video signal into encrypted data packets and associating decryption keys with each encrypted data packet, the dialogue unit being operable to supply a packet decoder to the client over the network for decoding the digital video/audio signal, and wherein the client includes an input stage connected to receive the packet decoder and load the packet decoder into a decoder host, the client input stage further comprising an input connected to receive the data packets and supply the data packets to the decoder host for packetwise decoding by applying the packet decoder with the associated decryption key of the data packet concerned, wherein the client input stage is configured to corrupt the decryption key of any given data packet before the decoded data of that packet is transmitted from the input stage in a form playable by the reproduction system.
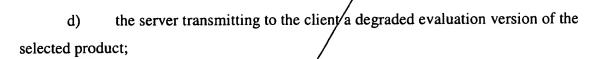
46.   A method of communicating between a client, server and gateway on a computer network, the method comprising:

        a)   the client establishing communication with the server to identify the client;

        b)   the server transmitting to the client a range of audio/video products for supply in return for payment;

        c)   the client transmitting to the server an evaluation request for one of the products;

d) the server transmitting to the client a degraded evaluation version of the selected product;

5   e) performing steps b) through d) at least once;

f) the client transmitting to the server a purchase decision and payment instrument;

10   g) the server and gateway communicating to obtain payment authorization for the requested product from the payment instrument;

h) the server and gateway communicating to effect payment capture for the authorized payment; and

15   i) the server transmitting to the client a non-degraded version of the selected product.